Fig. 1

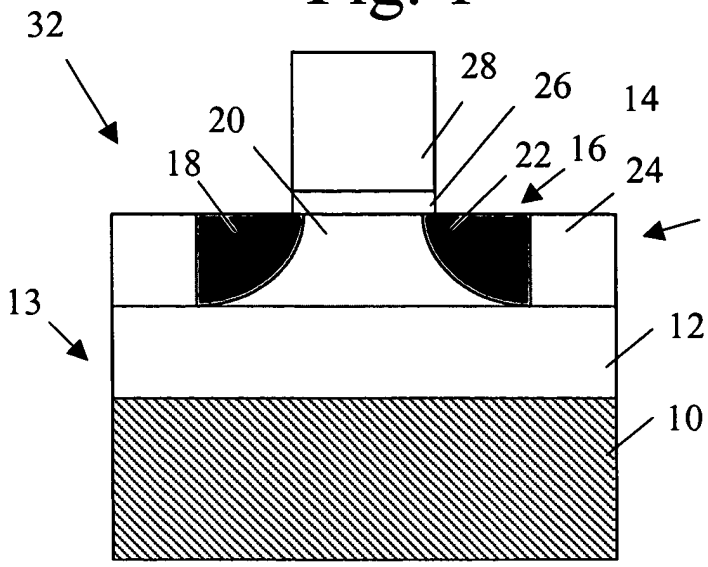

32
28
26
14
20
18
22
16
24
13
12
10

Fig. 2

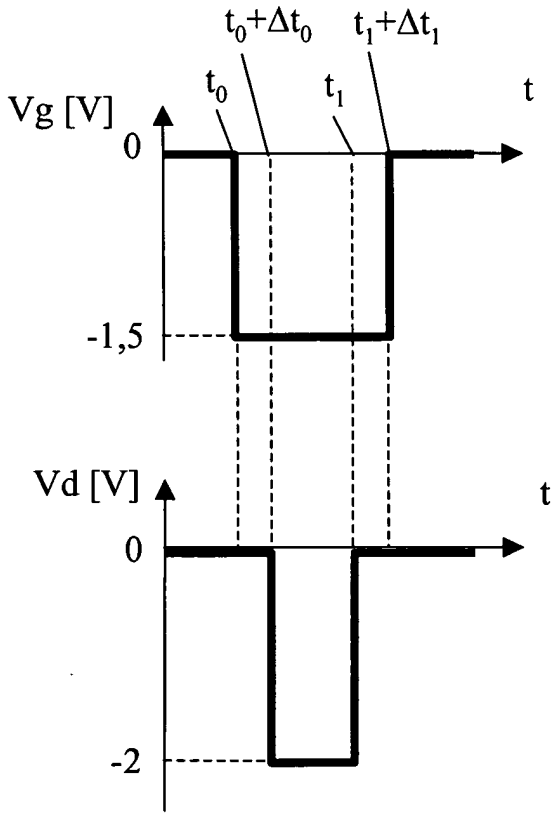

$t_0+\Delta t_0$
$t_1+\Delta t_1$
t_0
t_1
t
Vg [V]
0
-1,5
Vd [V]
t
0
-2

Fig. 3

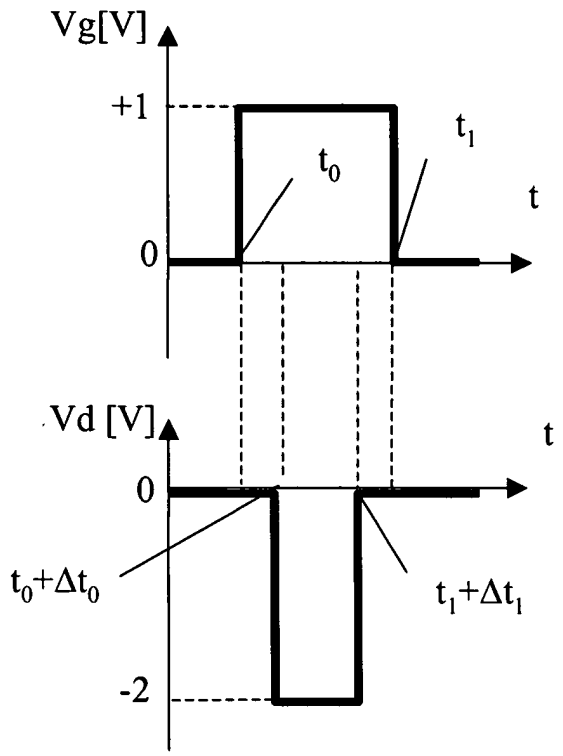

Vg[V]
+1
0
t_0
t_1
t
Vd [V]
0
t
$t_0+\Delta t_0$
$t_1+\Delta t_1$
-2

Fig. 4

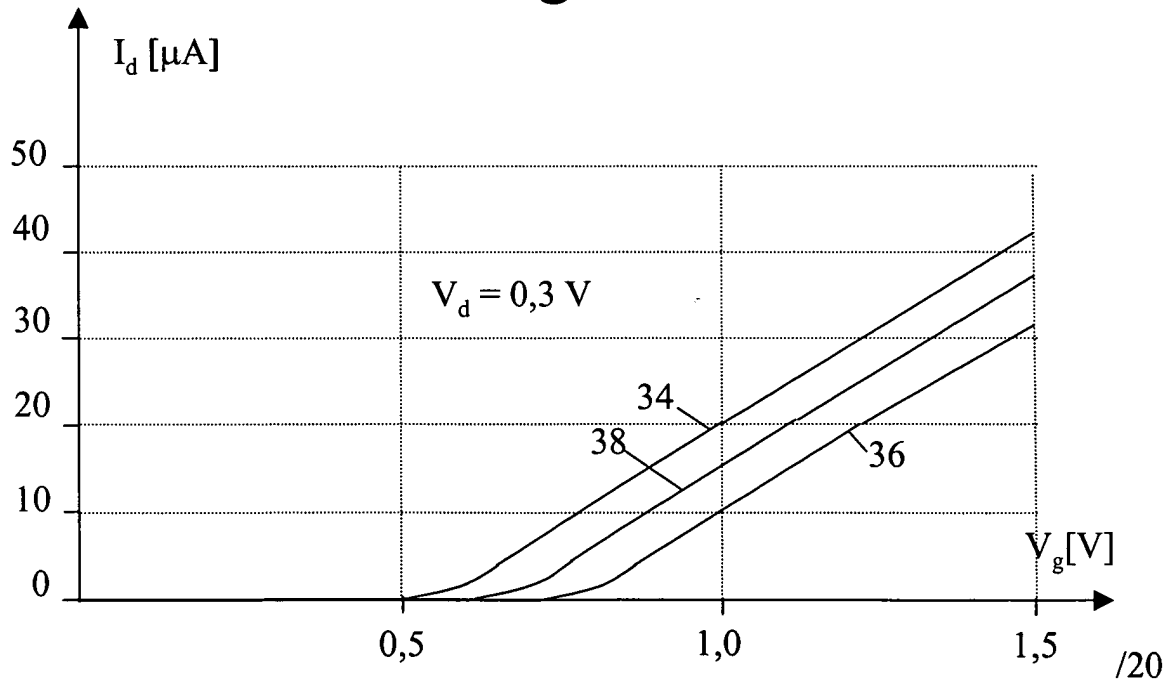

I_d [µA]
50
40
30
20
10
0
V_d = 0,3 V
34
38
36
V_g[V]
0,5
1,0
1,5

Fig. 5a

Fig. 5b

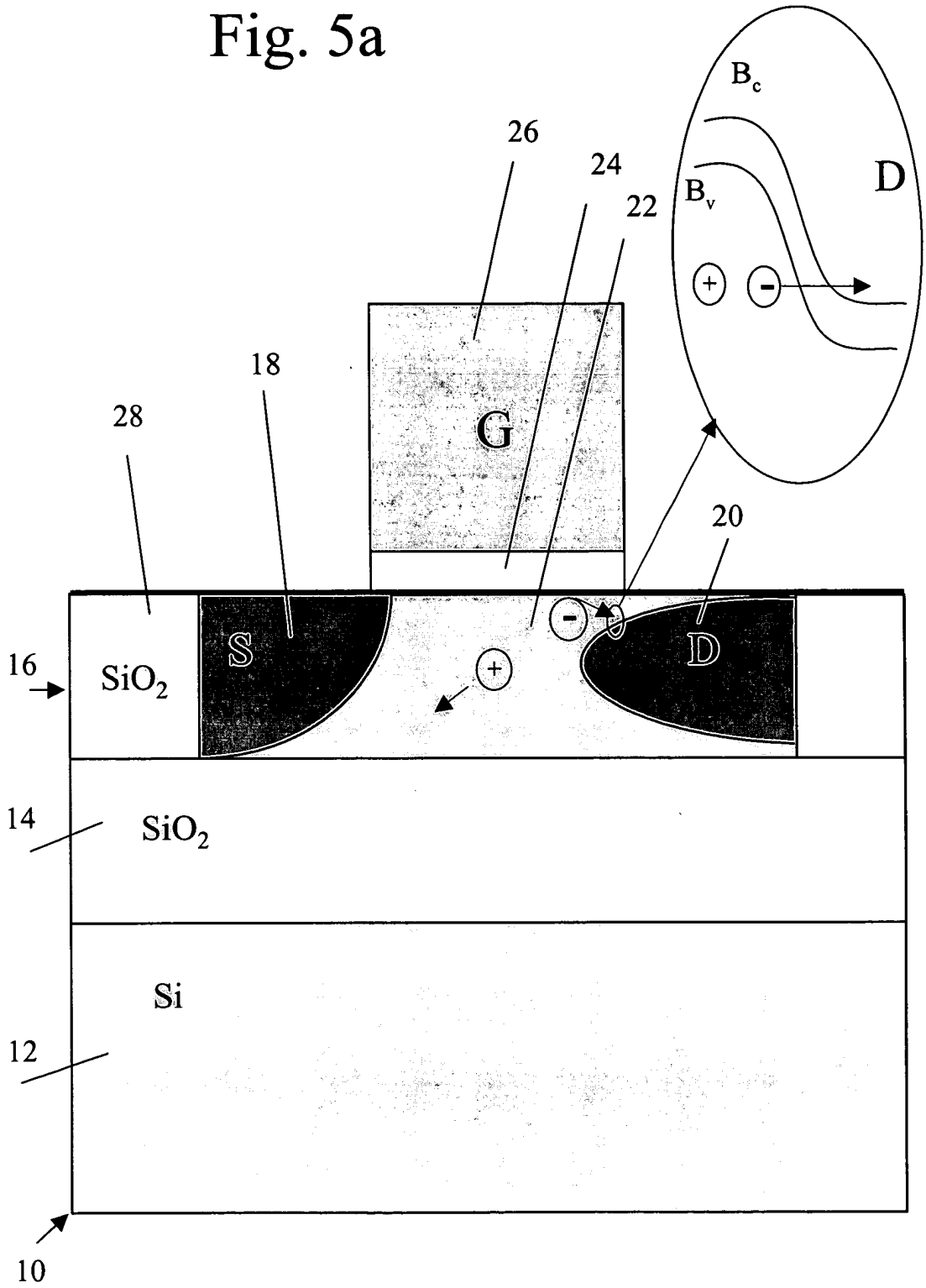


Fig. 6a

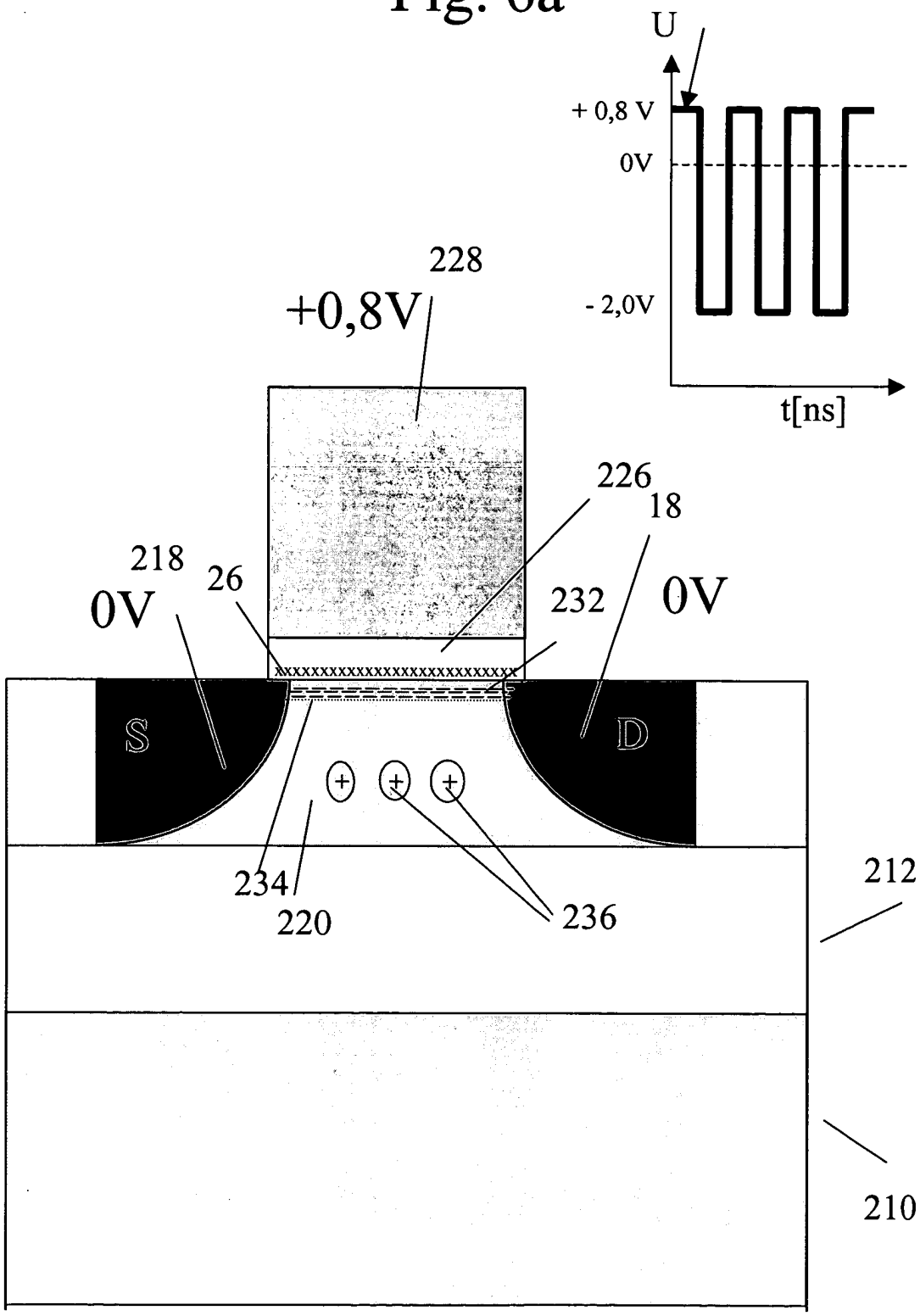

U
+ 0,8 V
0V
- 2,0V
t[ns]
228
+0,8V
226
18
218
26
0V
232
0V
S
D
234
220
236
212
210

Fig. 6b

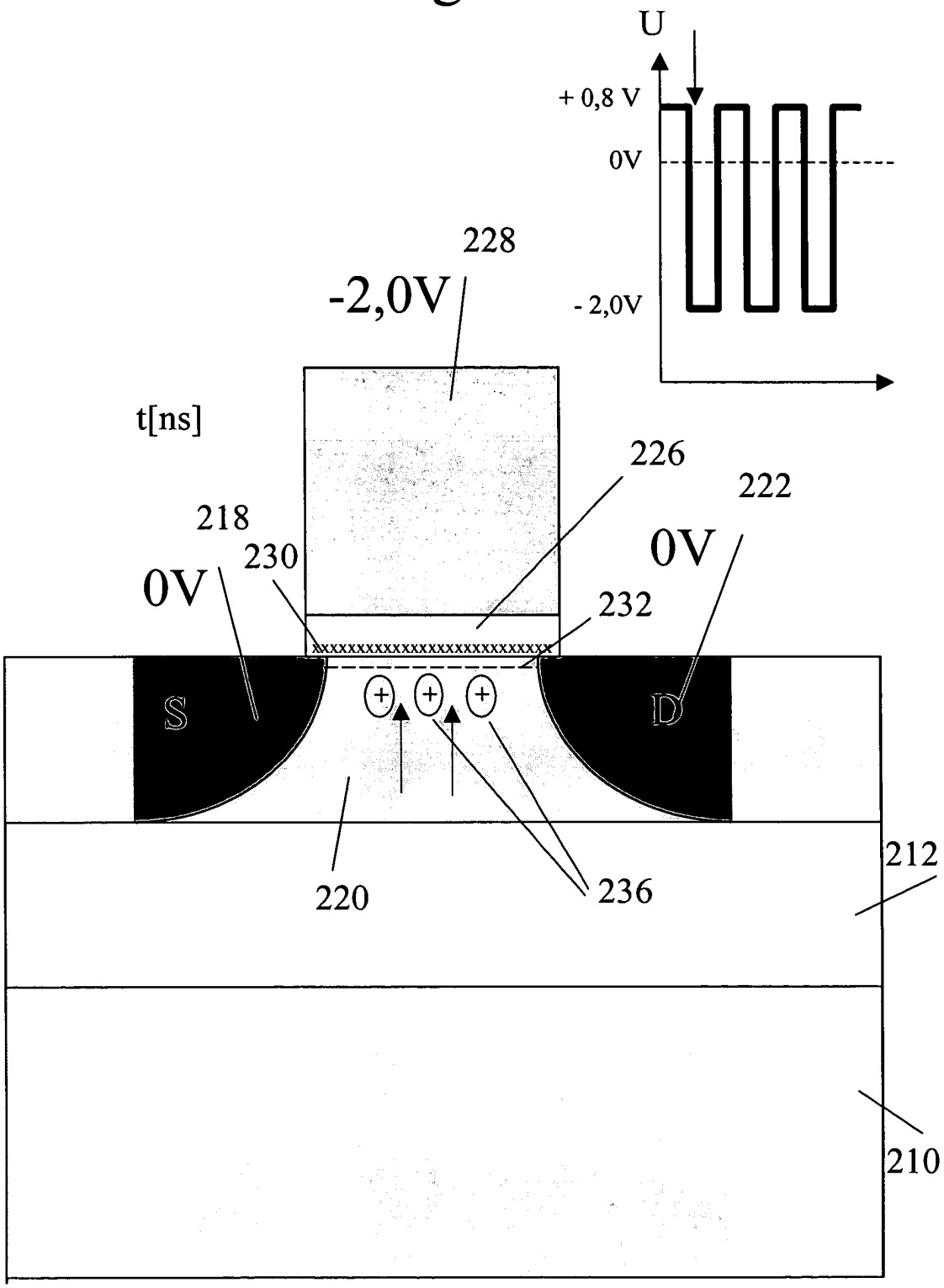

U
+ 0,8 V
0V
- 2,0V
t[ns]
228
-2,0V
226
222
218
230
0V
0V
232
S
D
220
236
212
210

Fig. 6c

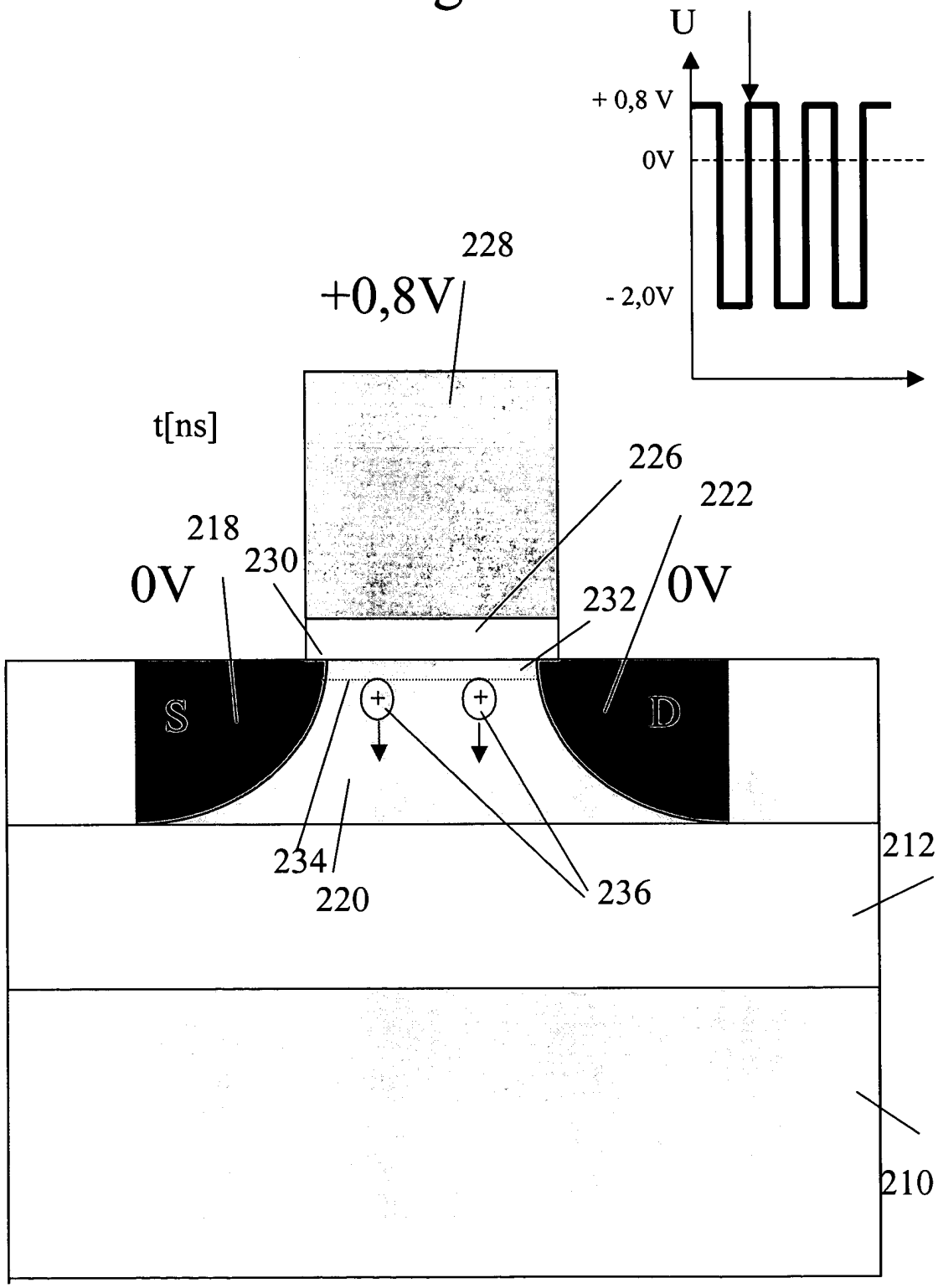

U
+ 0,8 V
0V
- 2,0V
t[ns]
228
+0,8V
226
222
218
230
0V
232
0V
S
D
234
220
236
212
210

Fig. 7a

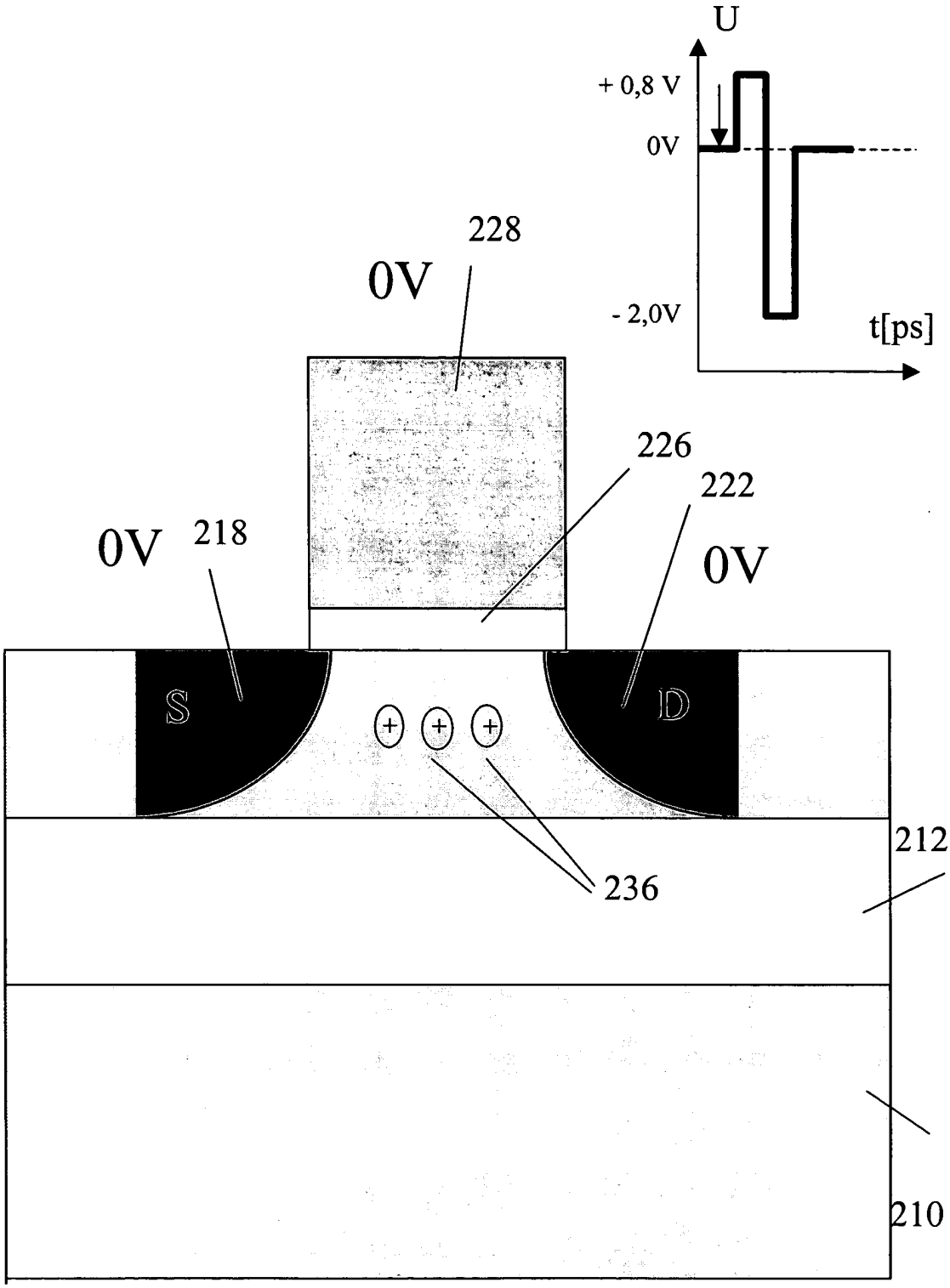


Fig. 7b

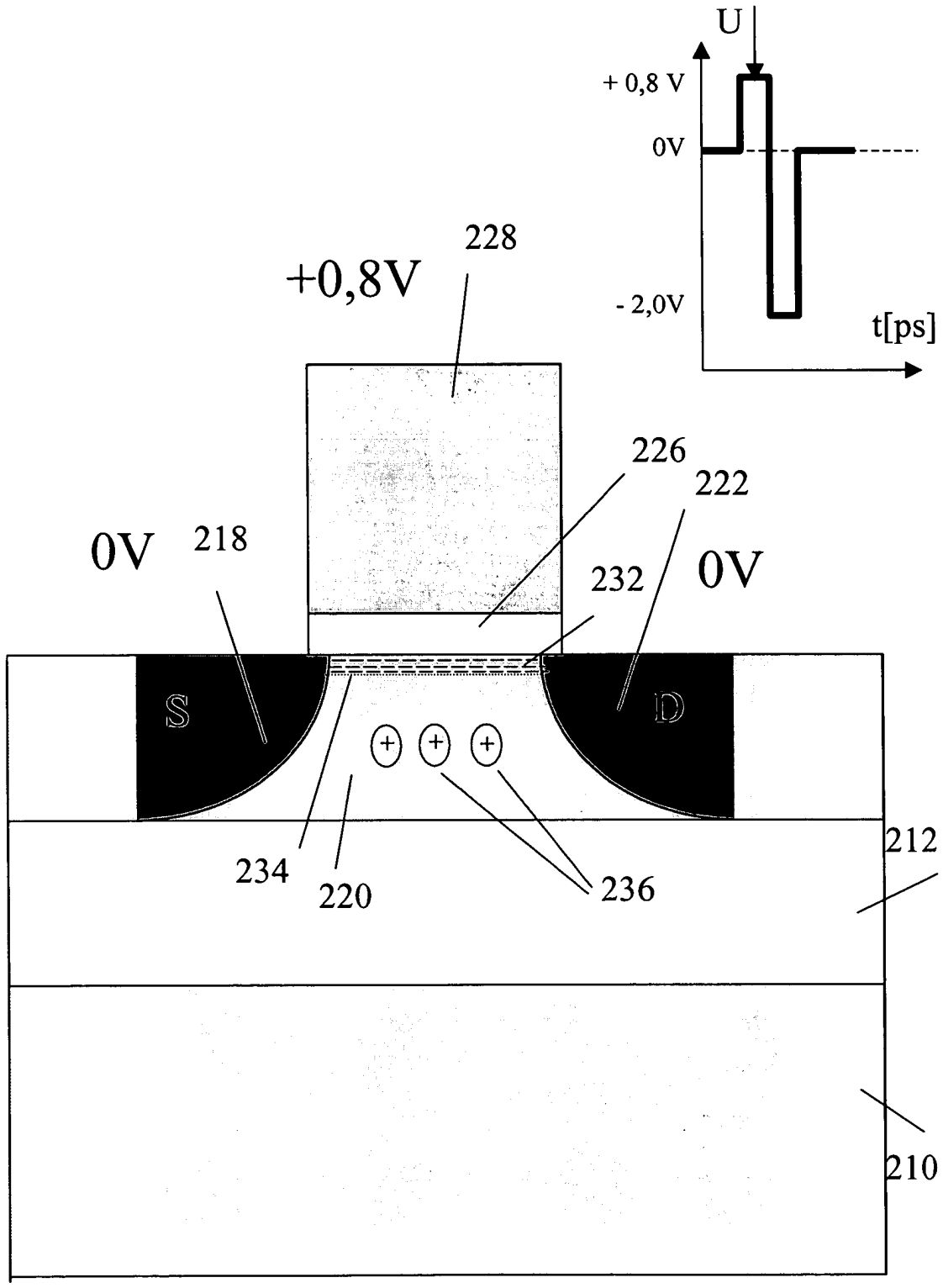

U
+ 0,8 V
0V
- 2,0V
t[ps]
228
+0,8V
226
222
0V
218
0V
232
S
D
234
220
236
212
210

Fig. 7d

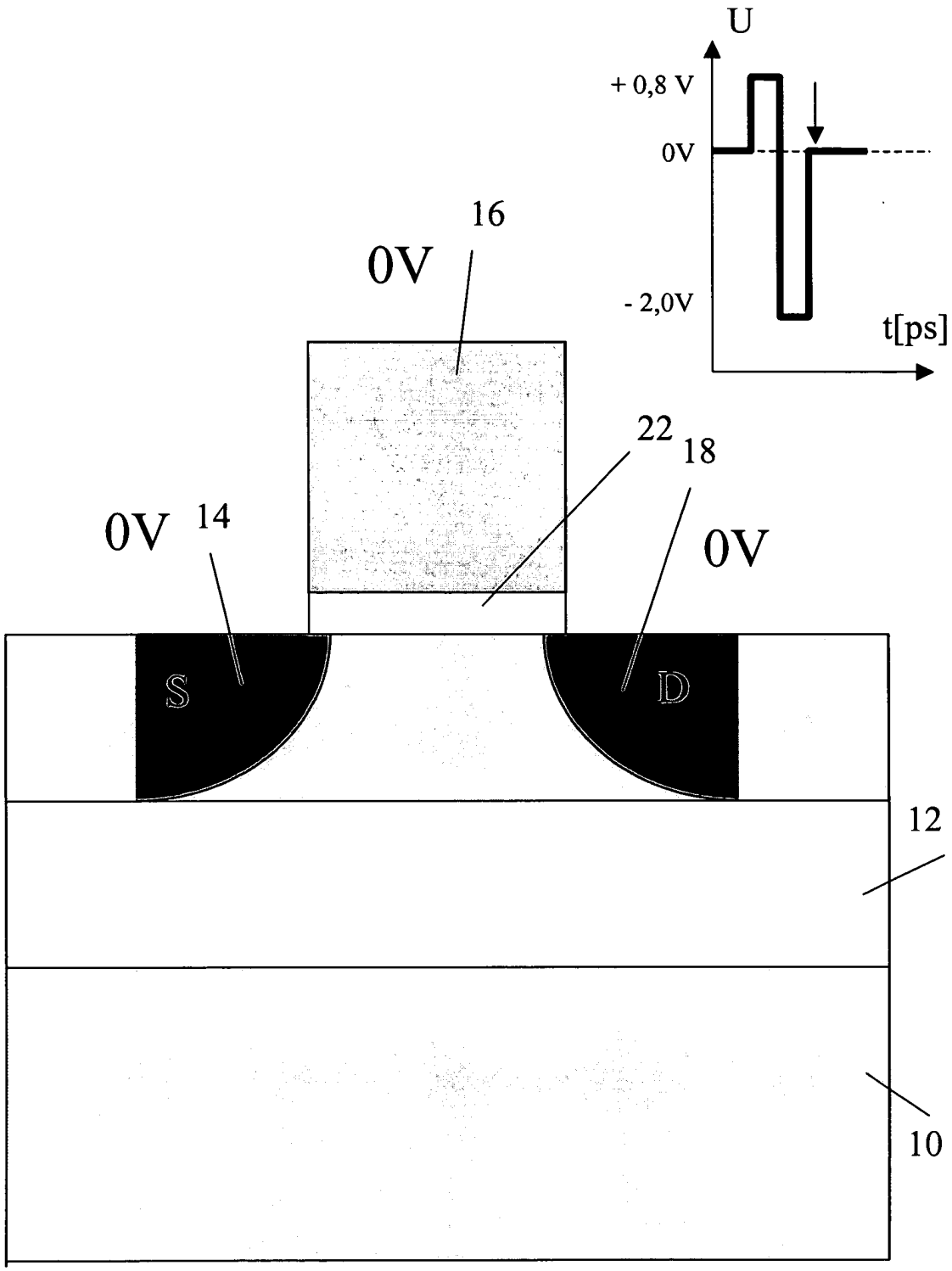


Fig. 7c

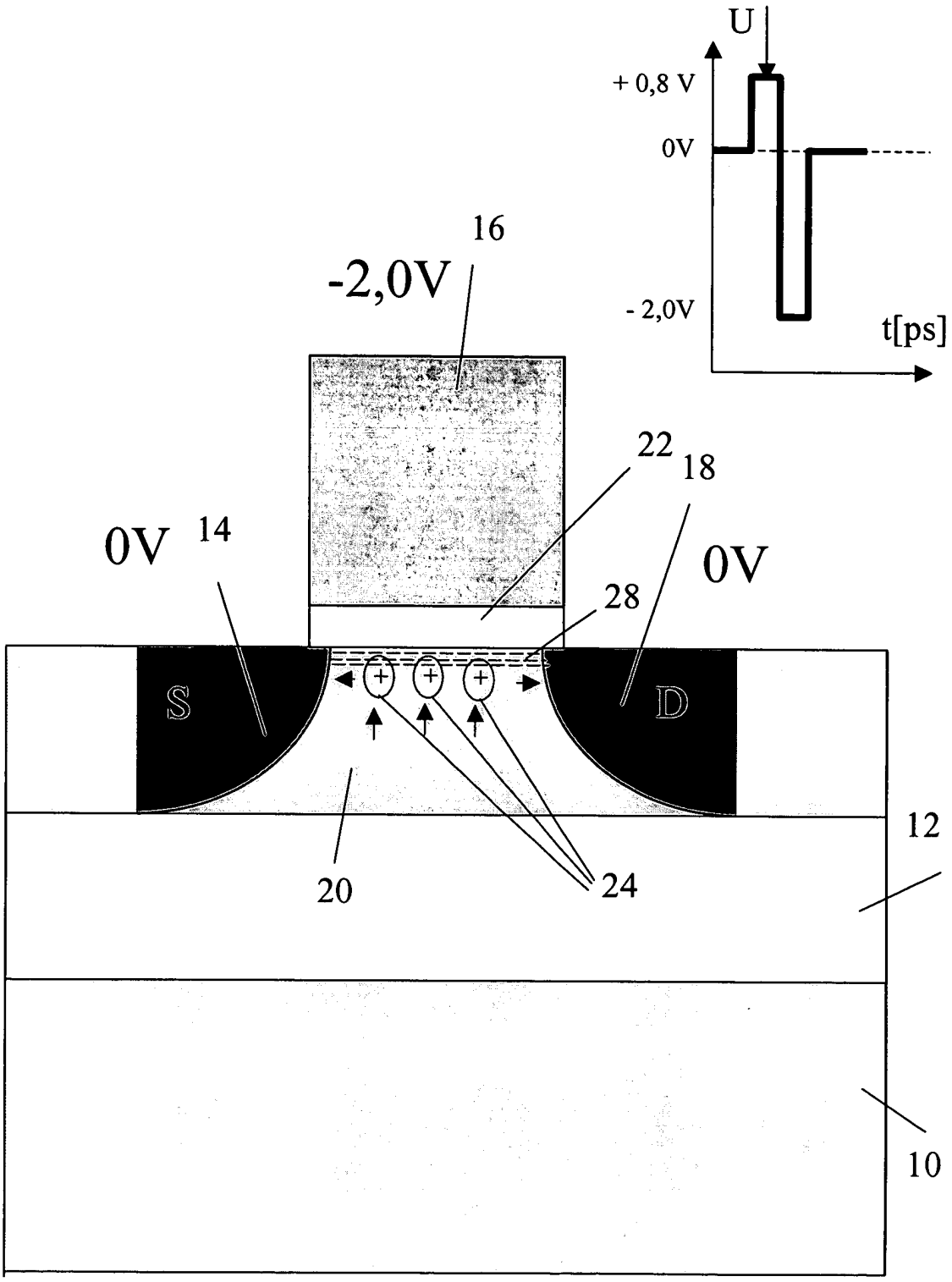


Fig. 8

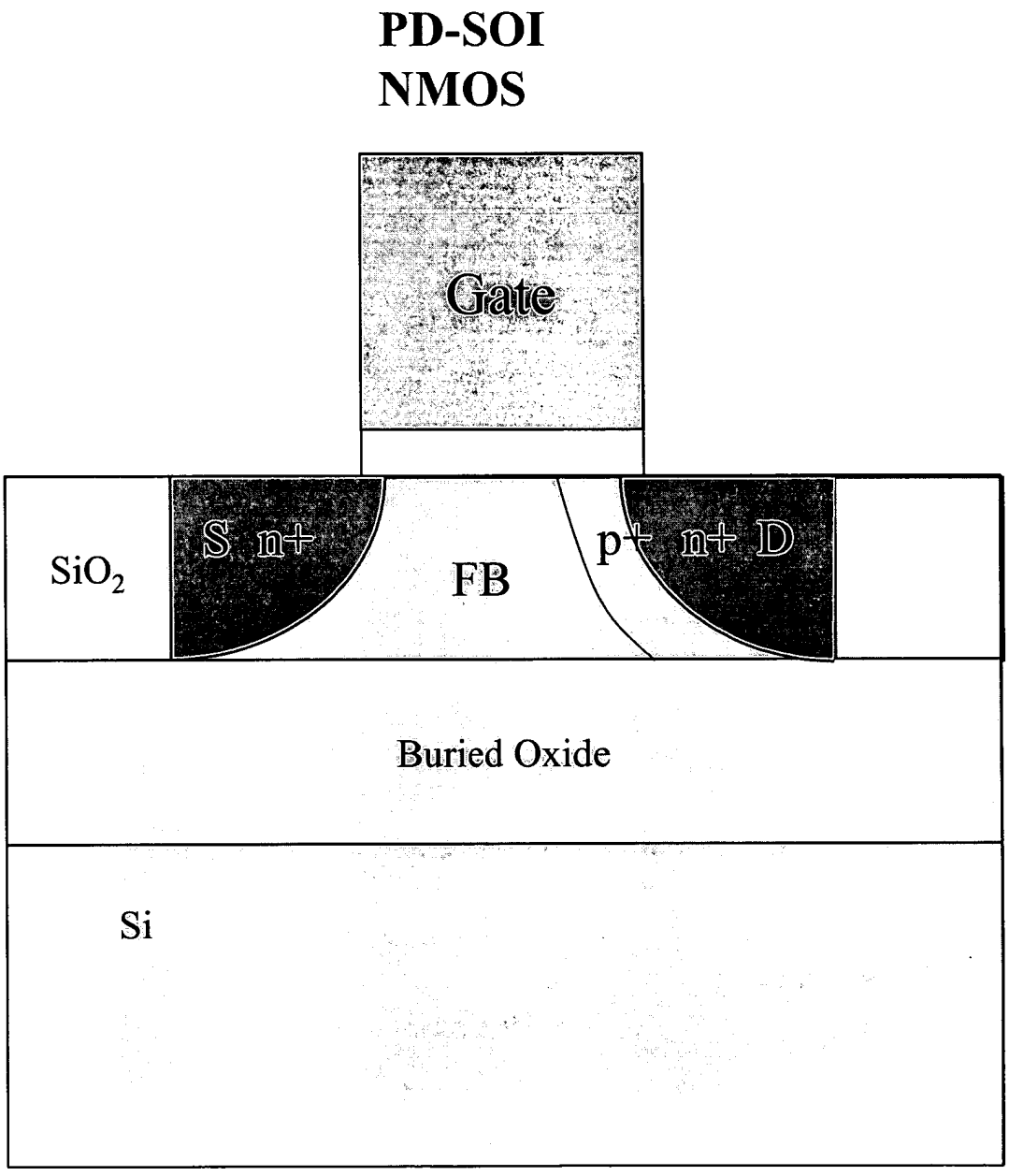


Fig. 9

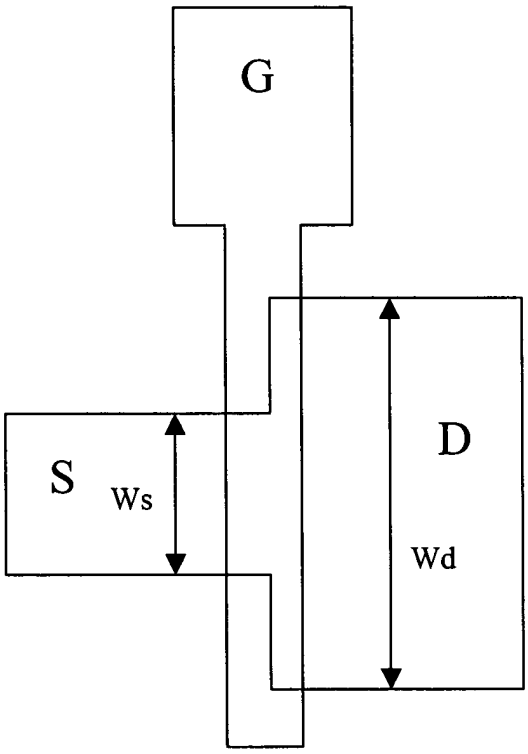


Fig. 10

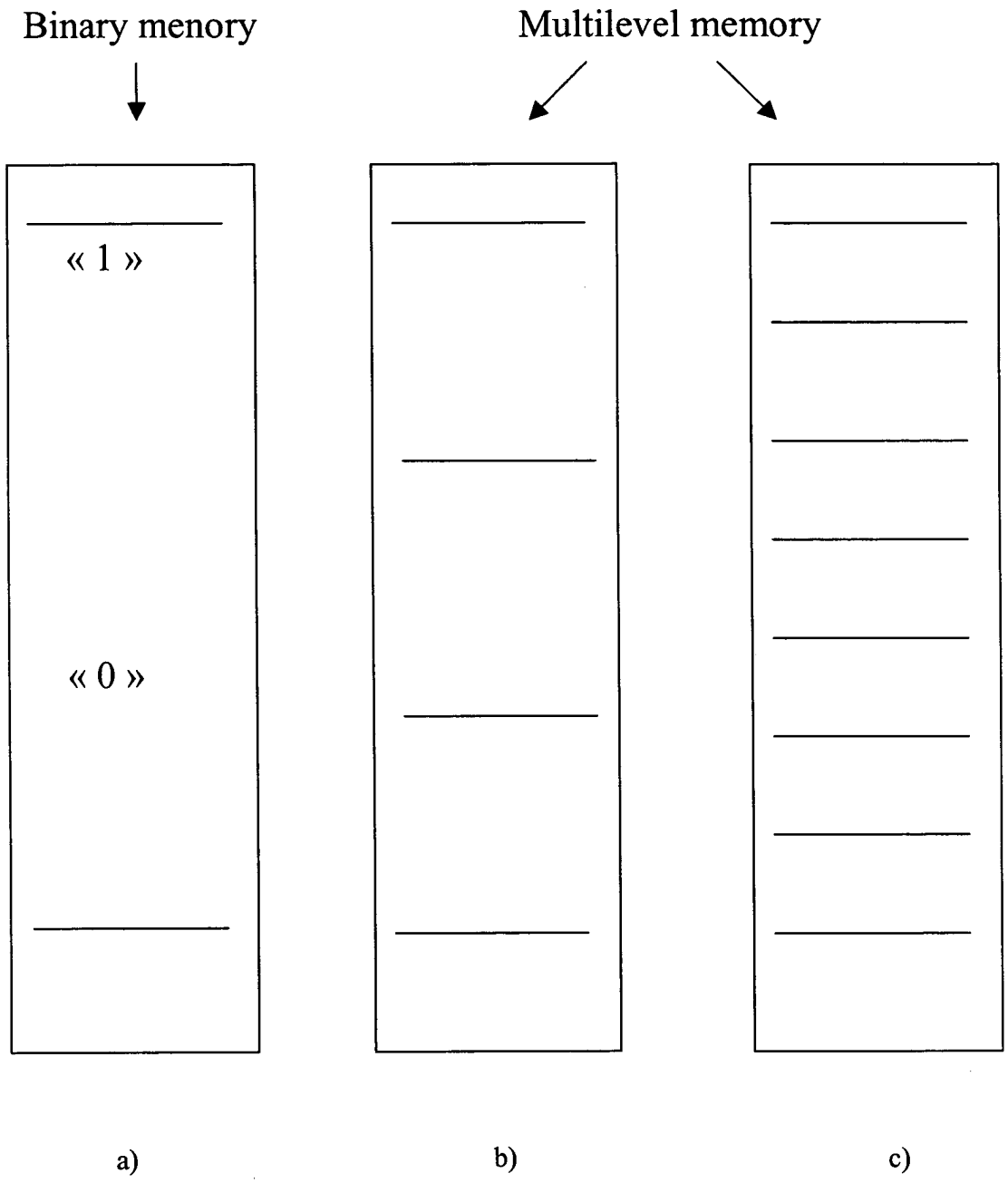


Fig. 11

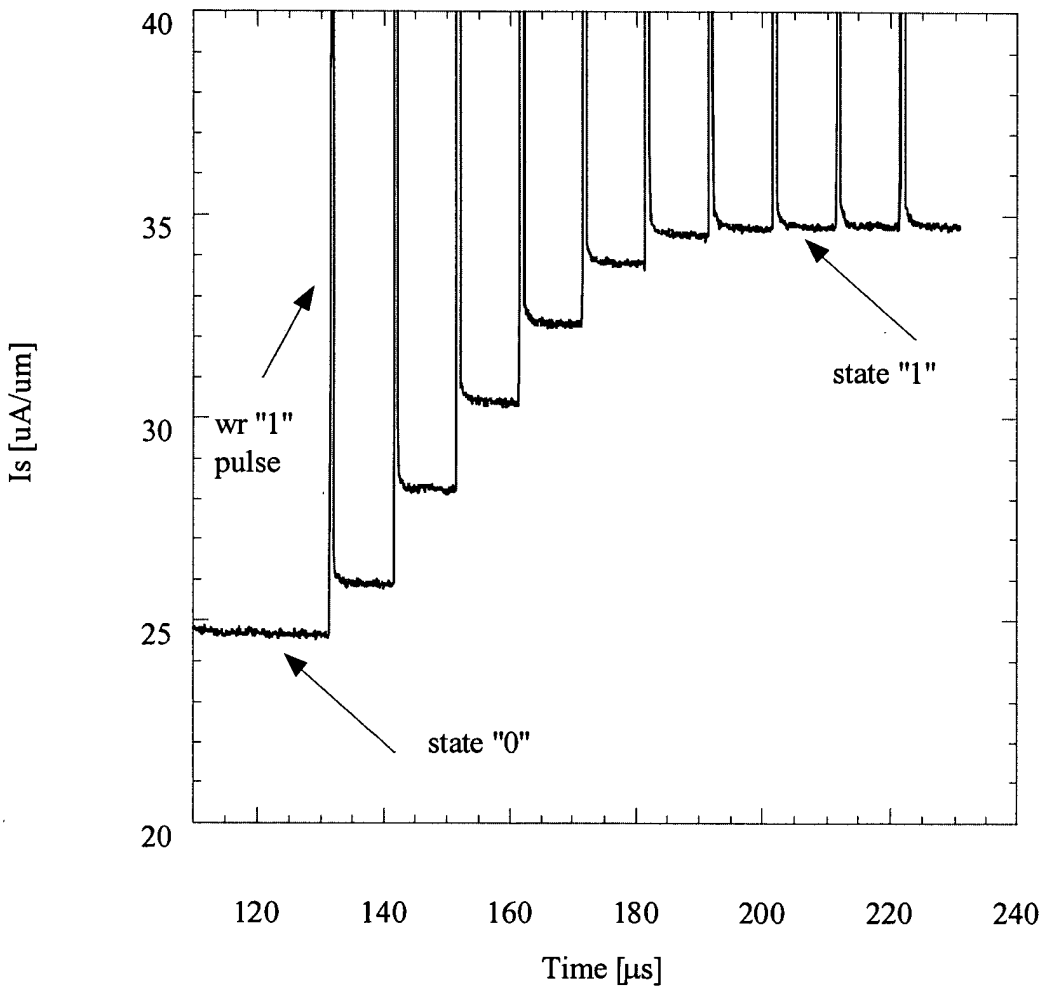

40
35
30
25
20
Is [uA/um]
wr "1"
pulse
state "1"
state "0"
120
140
160
180
200
220
240
Time [µs]

Fig. 12

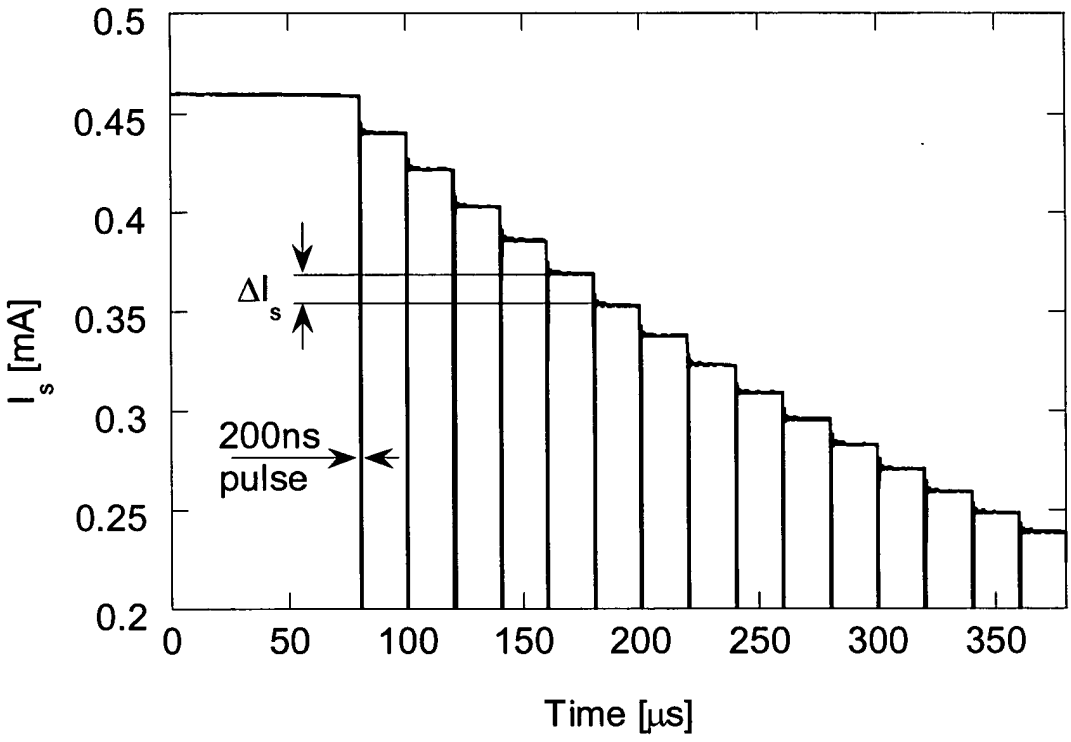

0.5
0.45
0.4
0.35
0.3
0.25
0.2
I_s [mA]
ΔI_s
200ns
pulse
0
50
100
150
200
250
300
350
Time [μs]

Fig. 13

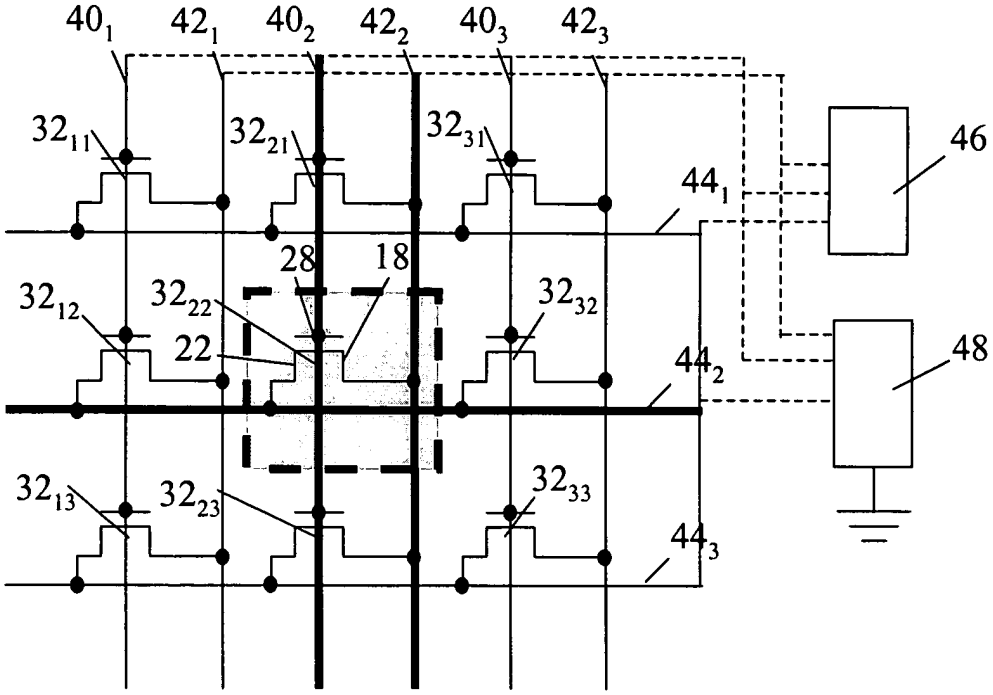

40₁
42₁
40₂
42₂
40₃
42₃
32₁₁
32₂₁
32₃₁
46
44₁
28
18
32₁₂
32₂₂
32₃₂
22
48
44₂
32₁₃
32₂₃
32₃₃
44₃

Fig. 14

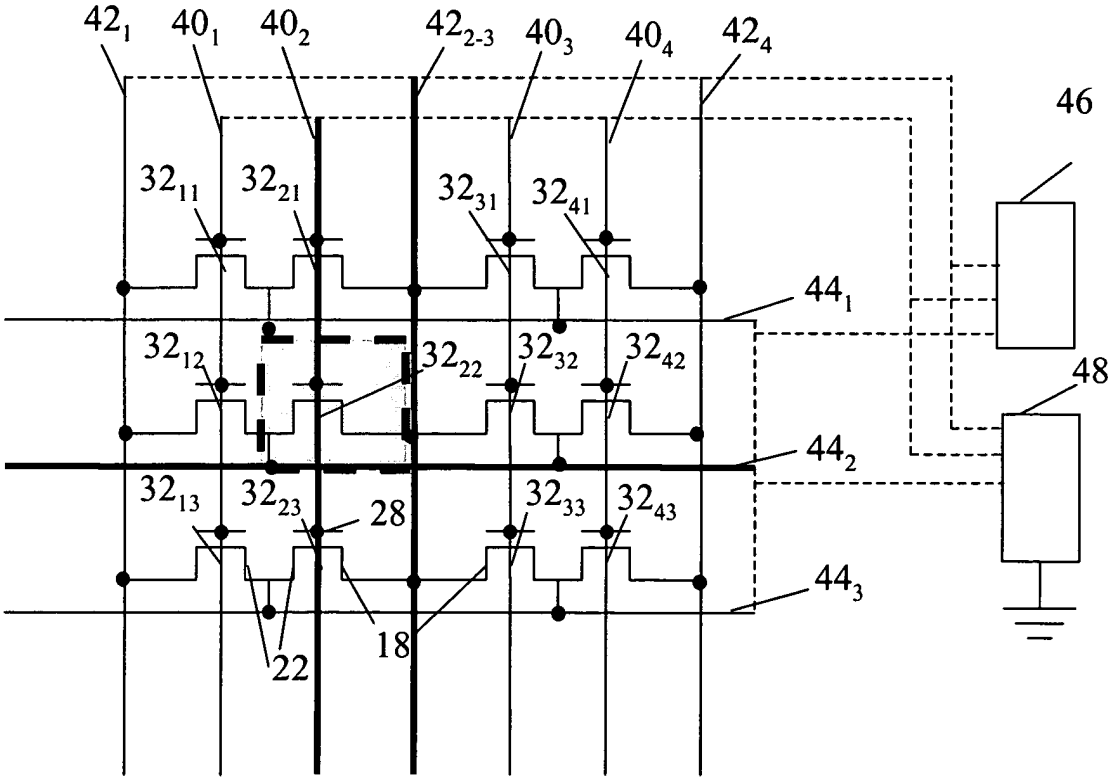

42₁
40₁
40₂
42₂₋₃
40₃
40₄
42₄
46
32₁₁
32₂₁
32₃₁
32₄₁
44₁
32₁₂
32₂₂
32₃₂
32₄₂
48
44₂
32₁₃
32₂₃
28
32₃₃
32₄₃
44₃
22
18

Fig. 15

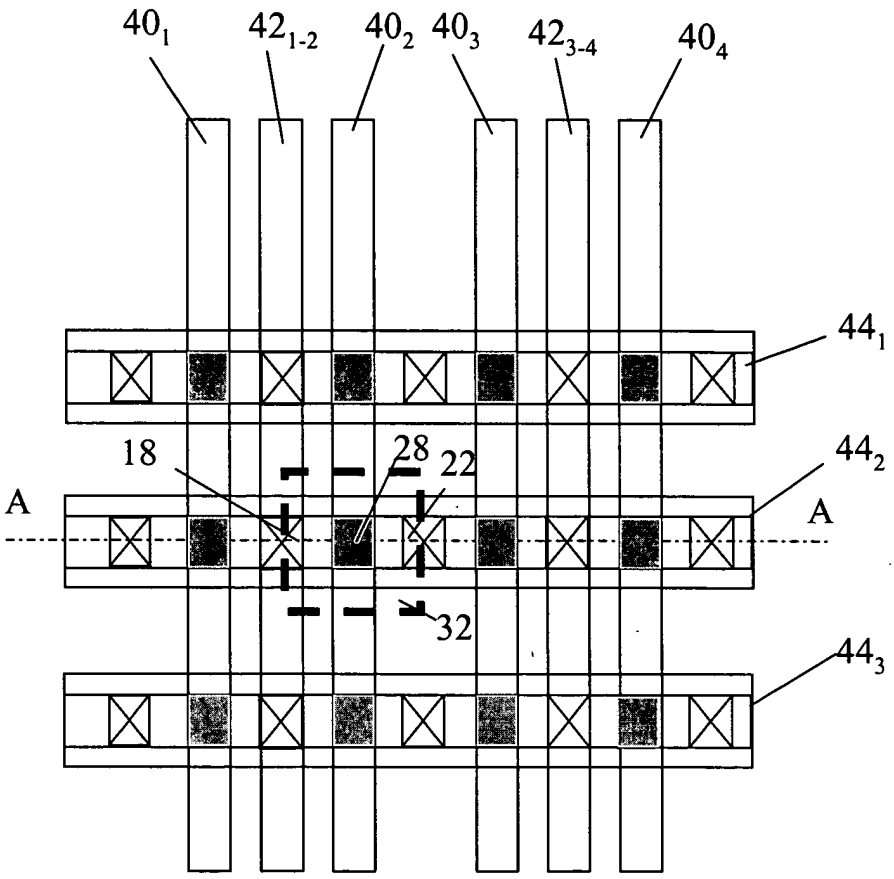
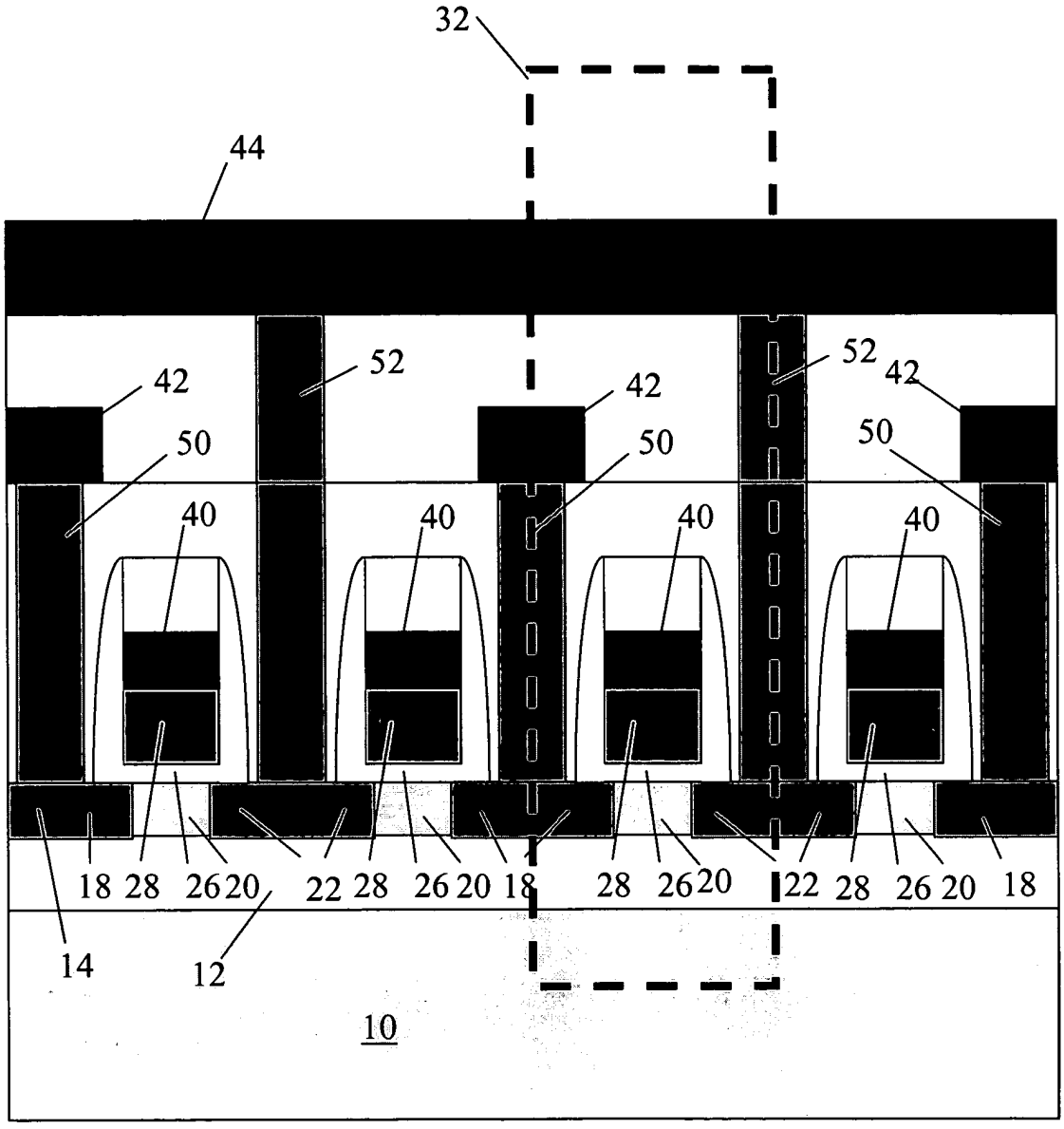


Fig. 16


32
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42
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Fig. 17

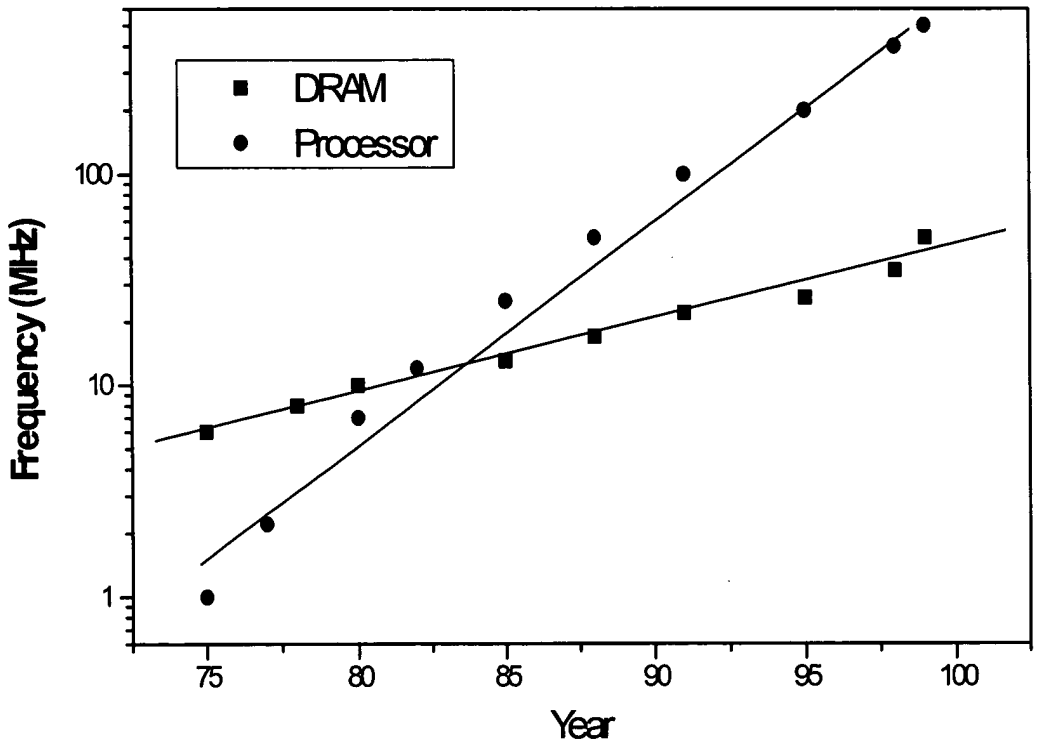

Fig. 18

Shematic of a sensor array